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AUTHOR Rao, Paladugu V.
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ABSTRACT

A study was conducted to determine: (1) whether technical processes at the Booth Library, Eastern Illinois University, should be automated; and (2) if automation were required, which system would be economically and technically feasible. Data from 323 technical service transactions were selected on a random basis between July 1971 and June 1973, and the data analysis revealed sluggish movement of books through technical processing. Automation of specific processes was recommended and appropriate technology was identified. The proposed system called for use of Library of Congress Machine Readable Cataloging (MARC) tapes to generate new book notices, book orders, and catalog cards. It was estimated that the new system would save over $30,000 within five years of its implementation. (EMH/PF)

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# AUTOMATION OF TECHNICAL SERVICES IN BOOTH LIBRARY: A FEASIBILITY STUDY

by

Paladugu V. Rao

Head, Information Systems Department

Booth Library

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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Automation of Technical Services in Booth Library: A Feasibility Study

Abstract: The objective of this study was to determine whether the automation of Booth Library technical services is economically and technically feasible. Data from 337 technical services transactions were selected on a random basis between July 1971 and June 1973. The data analysis revealed an extremely slow movement of books through the technical services processing. Automation of certain operations will expedite processing and get books into the hands of users faster.

## I. Systems Analysis Phase

Problem Definition:

The main objective of this investigation is to determine whether the automation of Booth Library technical services is desirable at this time. A secondary objective of this study is to determine an appropriate automation method in the case of a positive answer to the first objective.

Study Environment:

Booth Library technical services consists of an acquisitions department and a cataloging department. The acquisitions department is primarily concerned with ordering, receiving and paying for books selected by faculty and by subject bibliographers in the library. The cataloging department is primarily concerned with cataloging and processing new books and maintaining the card catalog. During the period of this investigation (July 1971 to June 1973), 9½ professional librarians, 13 non-academic employees and two graduate assistants were employed in technical services. In addition on the average about 700 hours student help per week were used in technical services. Thus, approximately one half of the professional staff, one third of non-academic employees, and one fourth of student employees were engaged in technical services activities.

Books Ordered and Cataloged by Booth Library FY 71-73

| Fiscal Year | # Ordered | # Cataloged |
|---|---|---|
| 71 | 32,796 | 38,009 |
| 72 | 25,708 | 30,948 |
| 73 | 26,125 | 31,131 |
| Total | 84,629* | 100,088** |

TABLE 1

* Does not include books received through standing orders.

** Including books received through standing orders and government documents received through the depository program.

Research Method:

Table 1 gives data on the number of books ordered and cataloged by the technical services in FY 71-73. From these books, 337 books were randomly chosen for this study. The books were chosen at the point when they are ready for circulation and then they were traced back to determine how long they stayed in the cataloging process. The cataloging process begins when a book is sent to the cataloging department by the acquisitions department, and ends when the books is cataloged and sent to data processing to key punch the book data for circulation purposes. On the average it took each book 157 days to go through the cataloging process with a range of 735 days to 12 days. The books were then traced back to determine how long they stayed in the order process. The order process begins when a new book request is received by the acquisitions department and ends when the book is received and paid. Here the sample was cut down to 278 books, because 59 of the 337 books selected for this study happened to be on standing order. Since books on standing order do not go through the full acquisitions process, these were excluded from the computation of average acquisition time for books. On the average it took each book 171 days to go through the acquisitions process with a range of 665 days to 1 day.

Conclusion of Systems Analysis Phase:

The study revealed that on the average a user has to wait 328 days or almost 11 months to see the books he has ordered. At the libraries visited by the investigator in connection with this study, the normal cycle for technical services processing is about three months for domestic books and about six months for foreign books. Thus, the study found a major problem within Booth Library technical services processing.

## System Design Phase

### A Proposed Automated System for the Technical Services of Booth Library

To alleviate the present technical services problem there are two possible solutions. One is to increase the technical services staff and the second is to adapt some of the processes to machine processing. Under the present and future university budget conditions, the second solution appears to be more economically viable.

Interal Factors:

Booth Library has already had considerable experience in library automation. Its existing automation programs have already received nationwide recognition. Inforonics, Inc., a private research and consulting firm commissioned by the California State Universities and Colleges (CSUC) to evaluate all existing library automation programs and to recommend programs for possible adoption by the CSUC system, rated Booth automation programs among the best in the nation and recommended their adoption by the CSUC.

The President's special study in 1971 revealed that our online circulation is actively saving money and that it would cost at least $15,000.00 a year more to process the present volume of circulation through a manual system.

External Factors:

In any automated system the most expensive process is the conversion of data into machine readable format. Many libraries fortunately, have been spared from this expense. The Library of Congress,

the national library of the U.S., acquires and does original cataloging of most books published in the world. The cataloging information is made available to the libraries, on a subscription basis, either in the form of catalog cards or in the form of proof slips.

With the advent of the computer the Library of Congress began to explore ways and means to distribute cataloging data in machine readable format suitable for computer processing. The library of Congress efforts resulted in the development of the MARC (Machine Readable Catalog) service. Starting in 1968, the Library of Congress made the MARC tapes with cataloging data for recently published books available to libraries on subscription basis. Up to 1974, the MARC tapes were produced from the proof slips. Starting in 1974, the Library of Congress began MARC as the primary cataloging information distribution media. Catalog cards and proof slips are to be produced from the MARC tape. The Library of Congress with the success of the MARC project, began to convert to retroactive cataloging data (i.e., cataloging data for the books published before 1968) into a machine readable format. It also began the conversion of cataloging data for foreign language publications into machine readable format. Consequently, most of the cataloging data needed by a contemporary college library can be obtained in machine readable format from the Library of Congress. Indications are that the card distribution service will be terminated in the near future and only tapes will be distributed. Libraries must have the ability to produce catalog cards from tapes or else turn to commercial services to do so. Commercial services were developed primarily to cater to high school libraries. They are not equipped to handle the college library acquisitions and cataloging problems. Consequently, the college libraries are expected to develop

their own automated acquisitions and cataloging systems.

There has been considerable discussion since 1970 to develop ILLINET (Illinois Library Information Network) in the state of Illinois. These discussions resulted in the formulation of a state-wide advisory committee in February, 1974. The committee members came from all types of libraries in the state of Illinois. The preliminary plans are already underway to develop this network. When fully implemented this network will provide access to the total library resources of the state of Illinois to any participating member. In order to become a member of this network a library must have the ability and facilities to use a variety of machine readable data bases.

The above factors indicate that the automation of Booth Library technical services will yield faster processing of materials, economy in processing costs, and the ability to interface with a state-wide library network.

Description of the Proposed System:

Figures 1-3 graphically depict an overview of the proposed Booth Library Technical Services System. Each week Booth Library will receive a MARC tape from the Library of Congress containing the cataloging data for the latest books. The tape is sorted into various subject records and punched into cards for distribution to the faculty.

Faculty selected cards are returned to the library. Using punched cards the selected records from the new MARC tape are extracted and merged with the old on order file to become a new on order file. The selected punched cards then become on order cards. Appropriate order lists are printed and mailed to the vendors.

FIGURE 1

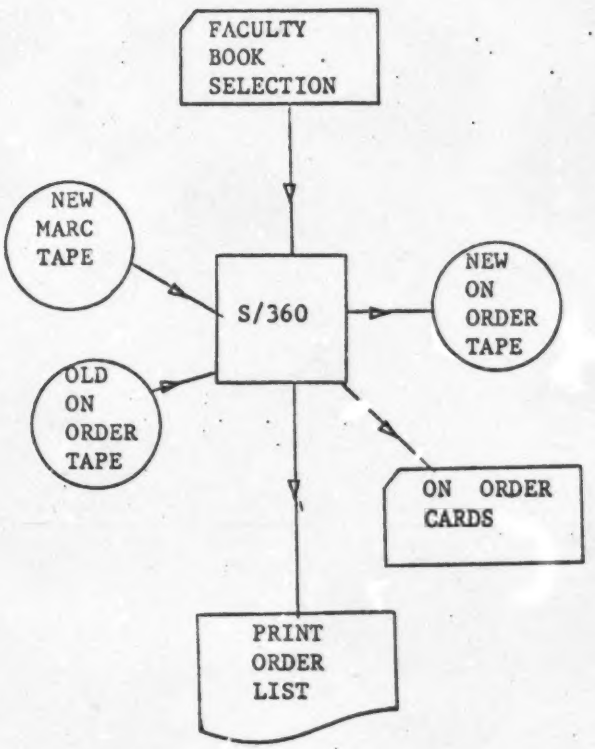
FACULTY
BOOK
SELECTION
NEW
MARC
TAPE
S/360
NEW
ON
ORDER
TAPE
OLD
ON
ORDER
TAPE
ON ORDER
CARDS
PRINT
ORDER
LIST

FIGURE 2

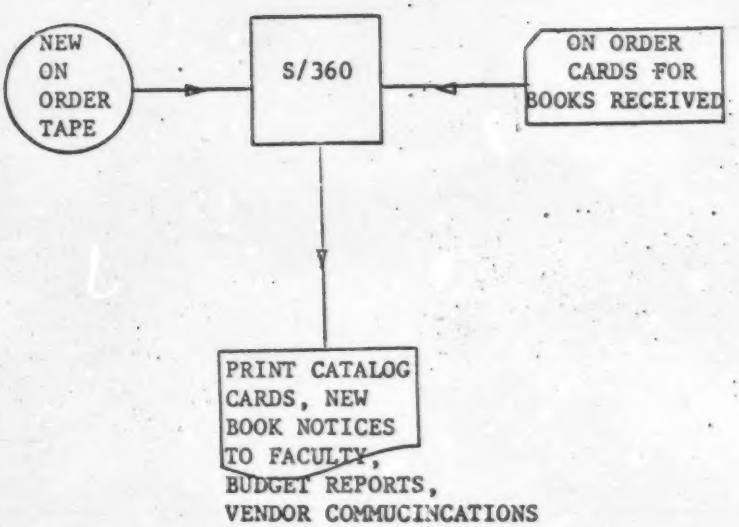
NEW
ON
ORDER
TAPE
S/360
ON ORDER
CARDS FOR
BOOKS RECEIVED
PRINT CATALOG
CARDS, NEW
BOOK NOTICES
TO FACULTY,
BUDGET REPORTS,
VENDOR COMMUCINCATIONS

FIGURE 3

Encumbering of the necessary funds can be done automatically by the computer.

When books arrive the appropriate on order cards will be pulled from the file and input into the computer along with on order tape. The processing results will include the necessary catalog cards, new book arrival notices to the faculty, budget reports, any necessary communications to the vendors. Thus, many repetitive clerical activities can be performed by the computer at a faster rate.

Costs:

The following are the estimated costs for the system:

Non-recurring Costs:

| | | |
|---|---|---|
| Programming Costs | $9,000.00 | |
| Library Print Train for the Computer Printer | $5,000.00 | |
| | | $14,000.00 |

Recurring Costs:

| | | |
|---|---|---|
| MARC Tape Subscription Service | $ 865.00/yr | |
| Computer Forms, Punched Cards, etc. | $ 900.00/yr | |
| Additional Computer Tapes | $ 200.00/yr | |
| Computer Processing Costs | $1,200.00/yr | |
| | | $ 3,165.00 |

Computer System Cost Distribution Over a Five Year Period

| YEAR | COSTS | SAVINGS |
|---|---|---|
| 1 | $17,165.00 | 0 |
| 2 | $ 3,165.00 | $ 6,000.00 |
| 3 | $ 3,165.00 | $12,000.00 |
| 4 | $ 3,165.00 | $18,000.00 |
| 5 | $ 3,165.00 | $24,000.00 |
| Total | $29,825.00 | $60,000.00 |

TABLE 2

Table 2 shows estimated savings to be realized by the computer system. Savings are expected to come from the reduction of clerical personnel needed in the technical services as the processes are automated. Starting with the second year after its implementation, the system is expected to reduce the need for technical services operating personnel at the rate of one employee per year over the subsequent four years. This estimation is made on the basis of the proven experience at other libraries which have implemented similar systems. Consequently, the automated system will save the University an estimated $30,175.00 within five years of its implementation.

Programming Support:

Three major programs will be needed to support the technical service system. Each of these major programs may contain several subprograms. The major function of each of the major programs is described below.

TSSPGM01: Sort new MARC tapes into subject fields and punch new book notice cards.

TSSPGM02: Read faculty selection cards, extract appropriate records from the MARC tape, combine these with old on order file, create new on order file and print order lists to the vendors.

TSSPGM03: Read order cards for the newly received books, extract appropriate information from the on order tape. Print catalog cards, faculty notices, budget reports, and vendor communications.

In conclusion, the Booth Library Automated Technical Services System has the ability to provide greatly improved library services at reduced costs.